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(54) ULTRASONIC DIAGNOSTIC APPARATUS

(57) Abstract:

PURPOSE: To obtain much information effective for diagnosis by arranging an ultrasonic probe to be inserted into a vessel, an ultrasonic transmitting/receiving section which irradiates a vessel wall with an ultrasonic wave while receiving an echo signal from the vessel wall, a tomographic image generation means to generate a tomographic image of the vessel wall by the echo signal and a quantitatively measuring means to determine at least one of a vessel section are, a vessel diameter, a thickness of the vessel wall and a beating-oriented change thereof.

CONSTITUTION: A cable driver is actuated to reciprocate an ultrasonic vibrator 5 spirally within an ultrasonic probe head 3 while an ultrasonic pulse is applied through a signal line to irradiate the internal wall of a blood vessel with an ultrasonic wave from the ultrasonic vibrator 5. The ultranonic vibrator 5 receives an echo from a part to be observed and outputs it to a distance calculation circuit 31 and a tomographic image generation circuit 32, which 32 generates a tomographic image of the blood vessel from the echo signal. The tomographic image signal is applied to a monitor device 33 and a tomographic image is displayed on a display screen thereof. Furthermore, the tomographic image signal is applied to a thickness calculation circuit 35 through a heart beat synchronization type image input circuit 34 and thus, the thickness calculation circuit 35 outputs a tube thickness signal h (θ) free from effect of heart beats to the monitor device 33.